Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

the action of water and frost upon shale, and we can readily see that the conditions which obtained in the formation of these valleys could never explain the deep, well-marked valleys of Six Mile Creek and the Cayuga Inlet, with their sloping banks and knolls and terraces. These deep, well-worn valleys are undoubtedly the result of glacial action. The mass of ice which filled the Cayuga Lake basin, dividing at its southern extremity, one part — the larger — flowed to the south, wearing down the Inlet valley, and the other traversed the Six Mile Creek valley, both of which were occupied by preglacial streams. The scratches on the polished surface of the underlying rocky table, as seen at the quarry in front of the buildings of the Cornell University, on the eastern edge of the basin, indicate that the glacier followed a direction a little east of south, corresponding with that of the lake. Among the drift accumulations are found bowlders of Oriskany Sandstone, and masses of Hamilton shale, formations which occur to the north, together with small granitic bowlders. The valley of Six Mile Creek furnishes some special examples of the drift phenomena. In several places its old channel has been completely choked up with masses of morainic débris about which the present stream has been obliged to cut its way through deep cañons. It was in this valley, at Mott's Corners, a few miles from Ithaca, that the remains of a mastodon were discovered several years since.[1]

In the cañons of this creek and in the gorges of those streams of more recent origin trap dykes are not uncommon. In some cases they thin out before reaching the surface, as in the cañon of Six Mile Creek above Green Tree Falls. There is no apparent displacement of the strata, the dykes being merely cracks filled with igneous rock.

Intimately related to the geology of Ithaca is the problem concerning the origin of Cayuga Lake. At present this has not been satisfactorily solved. Theories have been advanced, but as yet none are sufficiently matured. A consideration of this subject will require a careful and detailed study of the entire lake system of Western New York. While Ithaca does not present that field of study in structural geology to be found in a mountainous or disturbed region, it does offer many attractions to the collector and student of superficial deposits. — FRED. W. SIMONDS, Cornell University.

GEOGRAPHY AND EXPLORATION.

EXPLORATIONS OF THE POLARIS EXPEDITION TO THE NORTH POLE. — The reports of the scientific results of the Polaris expedition have been delayed simply, we are sorry to say, for want of means for publication. Dr. Bessels, the scientist of the expedition, made valuable collections of animal life at Polaris Bay, between latitudes 81° 20′ and 81° 50′ N., and soon after his return placed in the writer's hands the insects and fresh-water crustacea. Now that the English expedition has returned it is deemed expedient to publish a preliminary notice in order to secure priority. The Hymenoptera were represented by *Bombus Kirbyellus* Curtis, which occurred at Polaris Bay, May 31st and July 10th, and a new species, apparently of an ichneumon fly, *Microgaster Hallii*,[1] found in cocoons at Polaris Bay in June and again July 4th.

---

[1] See American Naturalist, v. 314.

Of Lepidoptera *Laria Rossii*, a moth closely allied to our *Dasychira*, was obtained in all stages from the egg to the imago. The eggs are spherical, smooth, and white, 0.06 inch long, and laid in a mass of about sixty, and, as in *Orgyia*, upon the cocoon. The larva when half grown is broad and short, the body, including the hairs, measuring 0.60 inch in length and 0.30 in breadth. The body is densely covered with long, fine reddish-brown hairs projecting in all directions and concealing the head and end of the body. There are six large, short, dense, subconical tufts, the two anterior and two posterior ones black, the middle ones yellowish. Head and body black. The full-fed larva is a little longer, the head broad, and large, and black, as is the rest of the body, including all the feet. In this stage the dorsal tufts are all black, with the hindermost one acute, and more prominent than the others; two segments intervene between the fifth and sixth pair. It is 1.60 inch long and 0.60 inch wide.

The cocoon is loose and thin, made of the long hairs of the caterpillar, held together by a thin, fine, silken web. There is an inner layer of hairs held in place by a very slight web. It is gray in color, and is an inch and a half long by one inch in diameter.

The two specimens of the moth are male and female, well-preserved, and agree with Curtis's description, except that the hind wings are unicolorous, with no "broad, blackish margin."

In the same bottle with the caterpillars of *L. Rossii* occurred a *Tachina* puparium of the usual form and 0.36 inch in length.

Besides this species occurred *Anarta Richardsoni* (Curtis) and *Glaucopteryx sabiniaria* (Curtis) with its larva, already described by the writer in the Monograph of Phalænidæ of the United States.

The following *Mallophaga* have been identified by Mr. S. E. Cassino: *Physostomum mystax* Burm., from *Larus eburneus; Docophorus lari* Fabr., from *Larus glaucus; Goniodes colchici* Denny, from *Strepsilus interpres.*

A small, blackish Poduran, *Isotoma Besselsii*,[2] occurred in abundance at Polaris Bay, July 5, 1872. The Arachnida were represented by four species, two of which have been identified by Mr. J. H. Emerton. *Erigone psychrophila* Thorell occurred at Polaris Bay June 3, 1872, and there were two unnamed species from Polaris Bay. At Foulke Fiord *Lycosa glacialis* Thorell was collected. All the spiders have been sent to Dr. Thorell to report upon. Upon the body of a *Bombus Kirbyellus* occurred several specimens of a *Gamasus*.

---

[1] *Microgaster Hallii*, n. sp. Medium sized, black, shining a little more than usual. Antennæ brown-black. Fore and middle pair of legs dark brown. Hind legs a little paler, with the basal third of the hind tibiæ and tarsi pale brown. Venation as usual, with the pterostigma narrower than usual instead of being nearly equilaterally triangular, as in some species. Length 0.12. Twelve specimens. Cocoons of the usual cylindrical shape; white. Length 0.17 inch. Two species of this genus have been recorded by Schiödte from Greenland, but not described. Dedicated to the memory of the late Captain Hall in command of the Polaris expedition.

[2] *Isotoma Besselsii*, n. sp. Intermediate in form between *I. tricolor* Pack., and *I. nivalis* Pack. Body long and slender, antennæ but little longer than the head; joints

Of fresh-water crustacea, besides a Copepod, *Daphnia rectispina* Kroyer occurred abundantly at Polaris Bay, August 1, 1872, as well as *Branchinecta groenlandica* Verrill. — A. S. PACKARD, JR.

MICROSCOPY.[1]

ILLUMINATION IN CONNECTION WITH POLARIZATION. — Mr. W. K. Bridgman, in a paper read before the Queckett Club, urges the importance of polarization as an element of microscopical illumination. His thoughtful and suggestive paper is very interesting, though far from conclusive in its demonstrations, and greatly marred by an apparent confusion in respect to the propagation, diffusion, and sensation of light. The essential point of his theory is that "it is the polarity induced by the impact of the ray, which excites or confers upon the reflected or refracted portion of the ray a condition enabling it to convey the impression of the object to the eye, and the desideratum is to restrict the effect as much as possible to this one action." It is not polarized light, but the act of polarization to which he attributes the effect. The excellence, for microscopical illumination, of light from a white cloud opposite the sun he attributes to its entire freedom from polarization, while the inferiority of light from a direction at right angles to this, or from the blue sky, is attributed to its being strongly polarized, a scattered polarization being said to afford the worst possible kind of illumination for the microscope. The author finds the best angle at which the light can be allowed to fall upon a painted surface to be its polarizing angle of about 56°, and to an approximate coincidence between the angle most conveniently obtained and the polarizing angle he ascribes the easy and general success in obtaining a good illumination of opaque objects by means of the side reflector or the condensing lens; though the result is at least equally well explained, in both cases, on the old theory that this is the angle at which an intense illumination is easily obtained without the view being obscured by a glare of reflected light. In the use of the Lieberkuhn, the author attributes the facility with which delicate details of structure are rendered visible by light from one edge,

---

rather short and thick. Spring much longer than in *I. nivalis*, but shorter than in *I. tricolor*, not reaching to the insertion of the hind legs, while the fork is as long as the basal joint. It is black, and 0.06 inch in length. It differs from any American or North European species, and is certainly not the *Podura humicola* of Fabricius.

[1] Conducted by DR. R. H. WARD, Troy, N. Y.